

What is claimed is:

1. A rotor for a line-start reluctance motor, comprising:
a core having an axis coupling hole in a coupling direction of a shaft;
5 a plurality of bars formed in the periphery of the core; and
a plurality of flux barriers, one and the other ends of the flux barriers
approaching the bars formed in first and second areas facing each other at a
predetermined angle on a central line of a first axis on a core plane vertical to the
coupling direction, at least parts of the centers of the flux barriers passing through a
10 third or fourth area between the first and second areas, surrounding the axis
coupling hole at predetermined intervals.
2. The rotor of claim 1, wherein the flux barriers surround the axis coupling
hole in a circular arc shape.
- 15 3. The rotor of claim 1 or 2, wherein the flux barriers are continuous.
4. The rotor of claim 1, wherein the flux barriers are symmetric on a
second axis vertical to the first axis on the core plane.
- 20 5. The rotor of claim 1, wherein a rate of an area of the flux barriers to a
whole area of the core plane is 0.35 to 0.45.
6. The rotor of claim 5, wherein the rate of the area is 0.39.
- 25 7. The rotor of claim 1, wherein a rate of a whole width of the flux barriers

to a width between the axis coupling hole and the outer circumference of the core is 0.35 to 0.45.

8. The rotor of claim 7, wherein the rate of the width is 0.405.

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9. The rotor of claim 1, wherein central lines of one and the other ends of the flux barriers and central lines of the bars which the flux barriers approach are disposed in the same directions, the central lines of the bars facing the center of the core.

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10. The rotor of claim 9, wherein the central lines of the bars and the central lines of the flux barriers are formed on the same lines.

11. The rotor of claim 1 or 10, wherein a width of the flux barriers is equal to or smaller than that of the bars which the flux barriers approach.

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12. The rotor of claim 1, wherein intervals between the flux barriers and the bars which the flux barriers approach are constant

13. The rotor of claim 12, wherein the intervals are less than 0.35mm.

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14. The rotor of claim 1, wherein a width of the outer circumferences of the bars adjacent to the outer circumference of the core is larger than that of the inner circumferences of the bars adjacent to the flux barriers.

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15. The rotor of claim 1, wherein some of the bars in the first and second

areas are not adjacent to the flux barriers.

16. The rotor of claim 1, wherein intervals between the bars and the outer circumference of the core are all the same.

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17. The rotor of claim 1, wherein the flux barriers are formed between the bars in the third and fourth areas.

18. The rotor of claim 1 or 17, wherein an area of the bars in the third and
10 fourth areas is smaller than that of the bars in the first and second areas.

19. The rotor of claim 1 or 17, wherein intervals between the bars in the third and fourth areas are smaller than those between the bars in the first and second areas.

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20. The rotor of claim 1 or 17, wherein a width of the outer circumferences of the bars in the third and fourth areas is larger than that of the outer circumferences of the bars in the first and second areas.

20 21. The rotor of claim 1, 15 or 17, wherein an angle of the first and second areas is 100 to 110°.

22. The rotor of claim 21, wherein the angle is 104°.

25 23. The rotor of claim 1 or 17, wherein a length of the bars in the first and second areas is larger than that of the bars in the third and fourth areas.

24. The rotor of claim 23, wherein at least one flux barrier is formed between a common tangent line of the inner circumferences of the bars in the first and second areas and a common tangent line of the inner circumferences of the bars in the third and fourth areas.

25. A rotor for a line-start reluctance motor, comprising:
a core having an axis coupling hole in a coupling direction of a shaft;
a plurality of bars formed in the periphery of the core; and
a plurality of flux barriers having their both ends aligned in one direction to approach the bars, respectively, central lines of the bars facing the center of the core and central lines of both ends of the flux barriers being formed in the same directions.

26. The rotor of claim 25, wherein the central lines of the bars and the central lines of both ends of the flux barriers are formed on the same lines.

27. The rotor of claim 25, wherein the flux barriers are formed between the bars disposed in a vertical direction to an alignment direction of the flux barriers.

28. The rotor of claim 25 or 27, wherein an area of the bars disposed in the vertical direction to the alignment direction of the flux barriers is smaller than that of the bars disposed in the alignment direction of the flux barriers.

29. The rotor of claim 25 or 27, wherein intervals between the bars

disposed in the vertical direction to the alignment direction of the flux barriers are smaller than those between the bars disposed in the alignment direction of the flux barriers.

5 30. The rotor of claim 25 or 27, wherein a width of the outer circumferences of the bars disposed in the vertical direction to the alignment direction of the flux barriers is larger than that of the outer circumferences of the bars disposed in the alignment direction of the flux barriers.

10 31. The rotor of claim 25 or 27, wherein a length of the bars disposed in the alignment direction of the flux barriers is larger than that of the bars disposed in the vertical direction to the alignment direction of the flux barriers.

 32. The rotor of claim 31, wherein at least one flux barrier is formed
15 between a common tangent line of the inner circumferences of the bars disposed in the alignment direction of the flux barriers and a common tangent line of the inner circumferences of the bars disposed in the vertical direction to the alignment direction of the flux barriers.

20 33. The rotor of claim 25, wherein a width of the flux barriers is equal to or smaller than that of the bars disposed in the alignment direction of the flux barriers.

 34. A rotor for a line-start reluctance motor, comprising:
a core having an axis coupling hole in a coupling direction of a shaft;
25 a plurality of bars formed in the periphery of the core; and
a plurality of flux barriers having their both ends aligned in one direction to

approach the bars, respectively, a width of the flux barriers being equal to or smaller than that of the bars which both ends of the flux barriers approach.

35. The rotor of claim 33, wherein the flux barriers are formed between
5 the bars disposed in a vertical direction to an alignment direction of the flux barriers.

36. The rotor of claim 34 or 35, wherein an area of the bars disposed in
the vertical direction to the alignment direction of the flux barriers is smaller than
10 that of the bars disposed in the alignment direction of the flux barriers.

37. The rotor of claim 34 or 35, wherein intervals between the bars
disposed in the vertical direction to the alignment direction of the flux barriers are
smaller than those between the bars disposed in the alignment direction of the flux
15 barriers.

38. The rotor of claim 34 or 35, wherein a width of the outer
circumferences of the bars disposed in the vertical direction to the alignment
direction of the flux barriers is larger than that of the outer circumferences of the
20 bars disposed in the alignment direction of the flux barriers.

39. The rotor of claim 34 or 35, wherein a length of the bars disposed in
the alignment direction of the flux barriers is larger than that of the bars disposed in
the vertical direction to the alignment direction of the flux barriers.

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40. The rotor of claim 39, wherein at least one flux barrier is formed

between a common tangent line of the inner circumferences of the bars disposed in the alignment direction of the flux barriers and a common tangent line of the inner circumferences of the bars disposed in the vertical direction to the alignment direction of the flux barriers.

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41. A rotor for a line-start reluctance motor, comprising:
a core having an axis coupling hole in a coupling direction of a shaft;
a plurality of bars formed in the periphery of the core; and
a plurality of flux barriers aligned in one direction, a length of the bars
10 disposed in an alignment direction of the flux barriers being larger than that of the bars disposed in a vertical direction to the alignment direction of the flux barriers.

42. The rotor of claim 41, wherein at least one flux barrier is formed
between a common tangent line of the inner circumferences of the bars disposed
15 in the alignment direction of the flux barriers and a common tangent line of the inner circumferences of the bars disposed in the vertical direction to the alignment direction of the flux barriers.

43. The rotor of claim 41, wherein the flux barriers are formed between
20 the bars disposed in the vertical direction to the alignment direction of the flux barriers.

44. The rotor of claim 41 or 43, wherein an area of the bars disposed in
the vertical direction to the alignment direction of the flux barriers is smaller than
25 that of the bars disposed in the alignment direction of the flux barriers.

45. The rotor of claim 41 or 43, wherein intervals between the bars disposed in the vertical direction to the alignment direction of the flux barriers are smaller than those between the bars disposed in the alignment direction of the flux barriers.

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46. The rotor of claim 41 or 43, wherein a width of the outer circumferences of the bars disposed in the vertical direction to the alignment direction of the flux barriers is larger than that of the outer circumferences of the bars disposed in the alignment direction of the flux barriers.

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